

CLAIMS

We claim:

1. An isolated polynucleotide which encodes a mammalian Zsig9 polypeptide wherein said polynucleotide encodes a polypeptide selected from the group SEQ ID NOs:2-6, 17, 20 19 and 21 or a polypeptide which is at least 90% identical to the polypeptides of said group.

2. An isolated polynucleotide which encodes a peptide or polypeptide having at least 15 amino acid residues comprised of an epitope-bearing portion of a polypeptide of SEQ ID NOs: 2-6, 17, 20 19 and 21 or a polypeptide which is at least 90% identical to said polypeptides.

3. The polynucleotide of claim 2 wherein the peptide or polypeptide is fused to a carrier polypeptide or other carrier molecule.

4. An expression vector comprising the following operably linked elements:

- a transcription promoter;
- a DNA segment which encodes a Zsig9 polypeptide or a peptide or polypeptide which contains an epitope-bearing region of a Zsig9 polypeptide; and
- a transcription terminator.

5. An expression vector comprising the following operably linked elements:

- (a) a transcription promoter;
- (b) a DNA segment encoding a chimeric polypeptide, wherein said chimeric polypeptide consists essentially of a first portion and a second portion joined by a peptide bond, said first portion being comprised of a mammalian polypeptide, said polypeptide being the amino acid sequences of SEQ ID NOs:

2-6, 17, 20 19 and 21 and said second portion being a second polypeptide or protein.

(c) a transcription terminator.

6. An isolated Zsig9 polypeptide selected from the group of amino acid sequences consisting of SEQ ID NOs: 22-6, 17, 20 19 and 21 or a polypeptide which is at least 90% identical to said polypeptides.

7. An isolated peptide or polypeptide having at least 15 amino acid residues comprised of an epitope-bearing portion of a polypeptide of SEQ ID NOs: 2-6, 17, 20 19 and 21.

8. An antibody, antibody fragment or single-chain antibody that specifically binds to a mammalian polypeptide, said polypeptide being defined by the amino acid sequences of SEQ ID NOs: 2-6, 17, 20 19 and 21 or a polypeptide which is at least 90% identical to said amino acid sequences.

9. An antibody of claim 8 wherein said antibody is either monoclonal or polyclonal.

10. The antibody, antibody fragment or single-chain antibody of claim 9 wherein said antibody, antibody fragment or single-chain antibody is humanized.

11. A method for producing an antibody which binds to a peptide or polypeptide defined by SEQ ID NOs: 2-6, 17, 20 19 and 21 or to a peptide or polypeptide which is at least 90% identical to said peptide or polypeptide comprising bringing into contact a peptide or polypeptide defined by SEQ ID NOs: 2-6, 17, 20 19 and 21 or to a peptide or polypeptide which is at least 90% identical to said peptide or polypeptide with a cell capable of producing antibodies or the cell is brought into contact with a nucleic acid which encodes said peptide or

12. The antibody of claim 11 wherein said antibody is either a polyclonal or monoclonal antibody.

14. The method of claim 13 wherein the antibodies are polyclonal or monoclonal.

15. An anti-idiotypic antibody, anti-idiotypic antibody fragment or anti-idiotypic single-chain antibody which binds to an antibody, an antibody fragment or single-chain antibody of peptide or polypeptide defined by SEQ ID NOs: 2-6, 17, 20 19 and 21 or to a peptide or polypeptide which is at least 90% identical to said peptide or polypeptide.